Washington Meets Wall Street: A Closer Examination of the Presidential Cycle Puzzle

Kraussl, R.G.W.; Lucas, A.; Rijsbergen, D.R.; van der Sluis, P.J.; Vrugt, E.B.

2008

document version
Early version, also known as pre-print

TI 2008-101/2
Tinbergen Institute Discussion Paper

Washington meets Wall Street

R. Kräussl[a]
A. Lucas[a,b,d]
D. Rijsbergen[a]
P.J. van der Sluis[a,c,d]
E. Vrugt[c]

[a] *VU University Amsterdam;*
[b] *Tinbergen Institute;*
[c] *APG Investments;*
[d] *Duisenburg School of Finance..*

Tinbergen Institute

The Tinbergen Institute is the institute for economic research of the Erasmus Universiteit Rotterdam, Universiteit van Amsterdam, and Vrije Universiteit Amsterdam.

Tinbergen Institute Amsterdam
Roetersstraat 31
1018 WB Amsterdam
The Netherlands
Tel.: +31(0)20 551 3500
Fax: +31(0)20 551 3555

Tinbergen Institute Rotterdam
Burg. Oudlaan 50
3062 PA Rotterdam
The Netherlands
Tel.: +31(0)10 408 8900
Fax: +31(0)10 408 9031

Washington Meets Wall Street: A Closer Examination of the Presidential Cycle Puzzle[1]

Roman Kräussl [a], Andre Lucas [a,b,c], David Rijsbergen [a],
Pieter Jelle van der Sluis [a,c,d], Evert Vrugt [d]

[a] Department of Finance, VU University Amsterdam
[b] Tinbergen Institute [c] Duisenberg school of finance
[d] APG Investments

October 2008

ABSTRACT

This paper tests the policitcal dimensions of the presidential cycle effect in U.S. financial markets. The presidential cycle effect states that average stock market returns are significantly higher in the last two years compared to the first two years of a presidential term. We confirm the robust existence of this cycle in U.S. stock markets as well as bond markets. As most rational theories to explain the cycle were falsified by earlier empirical work, this paper sets out to test the presidential cycle election (PCE) theory as an alternative explanation. The PCE theory states that incumbent parties and presidents have an incentive to manipulate the economy (via budget expansions, taxes, etc.) to remain in power. We formulate seven different propositions relating to fiscal, monetary, tax, and political implications of PCE theory. We find no statistically significant evidence confirming the PCE theory as a plausible explanation for the presidential cycle effect. The existence of the presidential cycle effect in U.S. financial markets thus remains a puzzle that cannot be easily explained by politicians mis-using their economic influence to remain in power.

Keywords: political economy, inefficient markets, market anomalies, calendar effects.
JEL Classifications: G14, P16, E32.

[1] Corresponding author: Roman Kraeussl, department of Finance, FEWEB/FIN De Boelelaan 1105, VU University Amsterdam, The Netherlands, rkraeussl@feweb.vu.nl, +31 20 5986102.

I. Introduction

The presidential cycle effect in U.S. stock market returns consists of higher stock market returns during the second half of a presidential term compared to the first. Huang (1985) reports that trading strategies based on this presidential cycle, i.e. switching out of stocks and into Treasury bills during the first and second years of the presidential cycle, produced returns superior to a traditional buy-and-hold strategy. Foerster and Schmitz (1997) examine each year of the presidential cycle individually and conclude that U.S. stock market returns are significantly lower in the second year of the presidential term, compared to the other three years. However, much about the influence of the presidential cycle on U.S. stock markets still remains unclear.

The key puzzle is why precisely there is a correlation between the presidential cycle and stock market returns in the first place. Several explanations have been put forward. First, the presidential cycle might merely proxy for variations in expected returns due to business cycle fluctuations. Booth and Booth (2003) find that this is not true. Second, the relationship between the presidential cycle and stock market returns could be concentrated around and limited to election dates. However, Santa-Clara and Valkanov (2003) find no significant evidence of stock price changes immediately before, during, or immediately after elections. Third, the difference in returns during the presidential cycle might be a compensation for risk. Market volatility could simply be higher in the second half of the cycle, thereby explaining the higher returns. However, Campbell and Li, (2004) indicate that the differences in returns cannot be explained by differences in market volatility. Finally, the presidential cycle effect might be driven by the impact of outliers. Gärtner and Wellershoff (1995) as well as Foerster and Schmitz (1997) find that the effect is not driven by individual outliers in the data, such as the October 1987 stock market crash.

Since most rational explanations fail to provide an adequate answer, the presidential cycle election theory[2] has been put forward as an alternative. This theory is based on the macro-economic political business cycle (PBC) theory by Nordhaus (1975) and MacRae (1977). The PBC theory states that business conditions are often manipulated by political parties trying to win elections. Nordhaus (1975) argues that presidential administrations have an incentive to stimulate the economy prior to the elections and to pursue deflationary policies after the elections, regardless of the political orientation of the incumbent administration. Furthermore, Rogoff (1990) argues that political budget cycles developed by that government tend to increase spending (especially toward projects with high immediate visibility), cut taxes, and raise transfers prior to and during election years. Studies by Chappell and Keech (1986) and Alesina and Sachs (1988) show the significant interactions between macroeconomic outcomes and presidential administrations, while Tufte (1978) and Haynes and Stone (1988) find some empirical evidence for the existence of a PBC. The PBC theory is also supported by

[2] The presidential cycle election theory was first published in the first edition of the Stock Trader's Almanac in 1967, and has returned in the yearly Stock Trader's Almanac ever since.

Fair (1982), who developed a model for voting behaviour. His model indicates that voters do not look back more than a year or two in judging the economic performance of an administration. This would give presidents an incentive to manipulate the economy prior to the elections, since the myopic electorate only judges the administration on its last years.

The presidential cycle election theory, popularized by Hirsch and Hirsch (2007), extends this PBC theory and states that the incumbent president would impose stimulative fiscal measures and corporate friendly policies to create a favorable voting environment close to elections. This results in an increase in federal spending, less regulation, lower taxes and an increasing growth of money supply. Investors become confident and optimistic about the upcoming election, anticipating that the new president will bring new prosperity in the market place. This would lead to a bullish stock market in the second half of a presidential term. After the election, when the sentiment of the anticipation goes down, investors are patiently waiting to see what will happen in the new administration. Usually, the first year of the presidential term is a quiet period where the new administration is facing a steep learning curve. The second year of the presidential term is the 'let-down' year where investors are disappointed with the presidents for not keeping their election campaign promises or for seeing the promises being brought down by Congress. These sentiments, coupled with the fact that the price for the stimulative policies conducted prior to the elections have to be countered with post-election deflationary measures, would inevitably lead to a bearish stock market in the first half of the cycle.

The present study examines the impact of this presidential cycle effect on U.S. financial markets and empirically tests the most plausible explanation for this effect, the so-called presidential cycle election theory. Using 1948-2004 data, this study finds a clear presidential cycle effect in both U.S. stock and bond markets. Average excess returns of the S&P 500 in the second half of the presidential cycle are significantly higher compared to those in the first half of the cycle. The second year underperforms the other years in the cycle by 9.5 percent, while the third year outperforms the other years by 13.8 percent. Both findings are statistically significant and confirm earlier findings in the literature.

Stock returns may be influenced by business cycle fluctuations. We control for this by including four traditional business cycle proxies in our regressions: the dividend yield, term spread, quality spread, and the relative interest rate. We also conduct a bootstrap procedure to control for the finite-sample behavior of our inference procedure. All of our findings remain robust.

Using U.S. credit spreads, we also find that bond markets show a clear presidential cycle pattern. Again, the pattern is most visible in the second and third year of the cycle. On average, the credit spread widens by 48 basis points during the second year of the cycle and shrinks by 45 basis points during the third year of the cycle. Both findings are statistically significant and robust to the inclusion of business cycle controls.

We proceed by empirically investigating whether the presidential cycle effect can be explained by the presidential cycle election (PCE) theory. We do so by testing seven propositions. We thus

significantly extend previous literature by being the first to empirically examine the presidential cycle pattern beyond the scope of financial variables only. We do so by also focusing on fiscal, political, and macroeconomic variables. Our first four propositions have a financial, fiscal or macro-economic character and focus on any potential economic manipulation by an incumbent president. Accelerating growth of money supply, lowering U.S. income tax levels or raising U.S. federal spending are examples of popular presidential manipulations stated by the PCE theory. We find, however, little evidence for any such presidential manipulation of the economy.

Our final three propositions address the political mechanisms behind the presidential cycle effect. The partisanship of the president appears to have no significant impact on the strength of the presidential cycle effect. This is supportive for the PCE theory, which states that presidential administrations have the same incentive when manipulating the economy (namely enhancing their chances on re-election), regardless of their political orientation. Analyzing the impact of the partisanship of the majority of Congress on the strength of the presidential cycle effect produces some surprising results. We find no Congressional influence on the strength of the presidential cycle effect. This lack of influence is at odds with the PCE theory and diminishes its political credibility. As a final check, we investigate whether the re-eligible or non-eligible status of an incumbent president has any impact on the presidential cycle effect. One would expect more economic manipulation when there is a re-eligible president in office, since he is still up for re-election. However, the empirical findings indicate no statistically significant difference in the presidential cycle effect under a re-eligible or non-eligible president. We conclude that there is little empirical evidence in support of the PCE theory as a sound explanation for the presidential cycle effect.

The remainder of this paper is structured as follows. Section II introduces the data and variables used in this study. The empirical findings on the presence of the presidential cycle effect in U.S. stock and bond markets are presented in Section III. The seven propositions of the PCE theory are presented and empirically tested in Section IV. The main conclusions are presented in Section V, which also sets out the agenda for future research.

II. Data

Following Santa-Clara and Valkanov (2003), the data are categorized into financial variables, political variables and control variables. All series are at a monthly frequency, except the series on tax levels, federal spending and the budget surplus, which are annual. The entire sample period, 1948:11-2004:10, contains 672 monthly observations and consists of 14 full presidential cycles. Table I provides the summary statistics for the financial and control variables used in this study.

A. Financial Variables

The log monthly returns of the value-weighted portfolio of the S&P 500 (*SP500*) are obtained from Robert Shiller's website[3] and used to form excess (*SP500 – TBL*) and real (*SP500 – INF*) returns of the S&P 500. The log interest rate (*TBL*) is computed from the three-month Treasury bill, obtained via the website of the Federal Reserve Bank of St. Louis (FRED). *INF* is the log monthly inflation, which is obtained from Robert Shiller's website as well. The monthly change in credit spread (*Credit spread*) is used to analyze the U.S. bond market. It is defined as the difference between the yield on BAA-rated corporate bonds and the yield on long-term government bonds (10-year Treasury note), which are both obtained from FRED. *M1 growth* indicates the yearly growth of money supply (*M1*) and is obtained from FRED. The U.S. income tax levels (with *Tax low* and *Tax high* representing the average lowest and highest U.S. income tax bracket) and the change in all tax levels (with *Tax change* representing the change in all of the U.S. income tax brackets) are obtained from the Joint Committee on Taxation. Federal spending (*Fed. spending*) indicates the annual change in U.S. federal spending, where federal spending is defined as the total of on- and off-budget federal outlays. The change in the U.S. budget surplus is denoted as a percentage of U.S. gross domestic product (*Budget surplus / GDP*) and as a percentage of U.S. total debt (*Budget surplus / Total debt*). If a budget surplus coefficient has a positive sign during a specific year of the presidential cycle, this indicates that the budget surplus increased (or the deficit decreased), thus implying that, on average, federal receipts were larger than federal outlays during that specific year of the cycle. Series on federal spending and the budget surplus are obtained from the budget of the United States government 2005.

B. Political Variables

The U.S. elections are held once every four years in the beginning of November.[4] Like Foerster and Schmitz (1997), no presidential changes other than the mandated elections are taken into account, since these events have not resulted in a new election cycle or an administration change. Since the elections are always held around the same date, the first year of the four-year election cycle is defined as the twelve months starting November 1 of a U.S. election year and ending October 31 of the next year. The three other years of the election cycle are defined in a similar way. The following dummy variables are defined to test for the presidential cycle effect: $YR_{it} = 1$ when it is the ith year of a presidential cycle at time t, and zero otherwise for $i = 1,..,4$. In order to test for the difference in the strength of the presidential cycle under a Democratic or Republican president we define $DP_t = 1$ when a Democratic president is in office at time t, and zero otherwise. Similarly, RP_t indicates when a Republican president is in office.

[3] http://www.econ.yale.edu/~shiller/data.htm.

[4] We also perform robustness checks starting the cycle in January when the new president actually obtains executive powers. This does not affect the main results, see the next section.

The U.S. Congress is the bicameral legislature of the federal government, consisting of two houses, namely the U.S. Senate and the House of Representatives. This study focuses on the relationship between the president and the Senate only, since the president acts by and with the advice and consent of the Senate. Furthermore, the Senate is the only house with a Committee on Finance. Congressional elections are held once every two years in November. So half of the Congressional elections coincide with the presidential elections, while the other half are mid-term elections. Congressional elections are always held for one-third of the Senate, which usually results in a partisan switch of control. We define the following dummy variables to test the difference in the strength of the presidential cycle under partisan control of both the Senate and the presidency: $PD_t = 1$ when there is partisan domination by either the Democrats or the Republicans over both the Senate and the presidency at time *t*, and zero otherwise. The absence of partisan domination is indicated by $PS_t = 1 - PD_t$. Finally, we define two re-eligibility dummies RE_t and $NRE_t = 1 - RE_t$, with $RE_t = 1$ when there is a re-eligible president in office at time *t*, and zero otherwise.

C. Control Variables

Since most of the variables examined in the propositions are influenced by business cycle fluctuations, this suggests the possibility that any observed pattern in stock returns over the presidential cycle may simply reflect the business cycle. To control for this, use several well-known business cycle proxies: the annualized log dividend yield (*DY*), the term spread (*TSP*) between the yield to maturity of a 10-year Treasury note and the three-month Treasury bill, the quality spread (*DSP*) between yields of BAA- and AAA-rated corporate bonds, and the relative interest rate (*RR*) computed as the deviation of the three-month Treasury bill rate from its one-year moving average.

The dividend yield as a business cycle proxy has been used before to capture time variation in expected stock returns, see for example Booth and Booth (2003). The intuition for this relation is that stock prices are low relative to dividends when discount rates and expected returns are high and vice versa (Fama, 1990). Chen, Roll, and Ross (1986) argue that the spread of lower-grade and higher-grade bonds is a good proxy for business cycle fluctuations. They argue that if business conditions are poor, spreads are likely to be large. According to Fama and French (1989), the term spread is a good proxy for the business cycle since it decreases (increases) near peaks (troughs) of economic activity. The fourth control variable, the relative interest rate, is included because many authors, including Campbell (1991) and Hodrick (1992), have noted that the level of short-term interest rates helps to forecast stock returns. However, since the short-term interest rate itself may be non-stationary over the sample period, it needs to be stochastically de-trended. Campbell (1991) suggests that the subtraction of a one-year moving average is a crude way to do this.

III. Main Findings

A. Presidential cycle effect on U.S. stock markets

We measure the effect of the presidential cycle on U.S. stock market returns by running the regression

$$r_t = \beta_1 YR_{1t} + \beta_2 YR_{2t} + \beta_3 YR_{3t} + \beta_4 YR_{4t} + \varepsilon_t, \quad (1)$$

where the stock returns are denoted by r_t and the years in the presidential cycle by the dummy variables YR_{it} for i = 1,..,4. Under the null hypothesis the presidential cycle has no effect on stock market returns, which results in four similar beta coefficients. Table II presents the results. Panels A and B present the results without and with controlling for business cycle variables, respectively. We use Newey-West (1987) as well as bootstrapped *p*-values to test for significance. If the residuals are conditionally heteroskedastic, the finite-sample distributions of the *t*-statistics are better approximated by the bootstrap.[5]

The results in Panel A of Table II reveal a clear presidential cycle effect for U.S. stock market returns over the years 1948 to 2004. On average, both excess and real returns in the first half of the presidential cycle are lower than returns in the second half of the cycle. Comparing the average annualized excess and real returns of the third year of the presidential cycle with the average annualized excess and real returns of the other three years, results in a difference of 13.82 and 13.46 percent, respectively. Both differences are economically and statistically significant.

The second year, by contrast, significantly underperforms the other years of the cycle. Comparing the average annualized excess and real returns of the second year of the presidential cycle with those of the other three years, we see an underperformance of 9.53 and 9.80 percent, respectively. The differences are economically significant, while statistically significant at the 10 percent level. Furthermore, our robustness checks show that all differences in the second and third year of the cycle are significant and stable if we split the sample in two equally sized sub-samples. If we relocate the start of the cycle to January rather than November to account for the moment the new president actually obtains executive power, the effects remain robust, though the significance in year two compared to the other years drops from 5% to 10%. All differences also remain economically and

[5] To obtain the *p*-values using bootstrapped standard errors, we conducted the following resampling procedure. First, regression (1) is run under the alternative hypothesis $H1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4$. A sample with replacement is drawn from the estimated residuals and used with the estimated coefficients to generate a pseudo-sample of bootstrapped returns. Next, the pseudo-sample is used to estimate the regression coefficients in (1). Repeating the process 1000 times, bootstrapped *p*-values can be computed. With two different *p*-values, a decision has to be made which *p*-value to believe. We follow Santa-Clara and Valkanov (2003) who state that it is most reliable (and conservative) to consider all results and use the maximum *p*-value in order to establish the significance of each test.

statistically significant after controlling for business cycle fluctuations, see Panel B. The lower returns in the second year followed by very high positive returns in the third year seem to support earlier findings on the existence of a presidential cycle effect in U.S. stock markets.

B. Presidential cycle effect on the U.S. corporate bond market

The contingent-claims approach implies that the debt claim (of a bondholder) has features similar to a short position in a put option (Merton, 1974). Credit spreads should therefore increase if either asset values decline or asset volatilities increase, see Collin-Drufesne, Goldstein and Martin, (2001). Moreover, credit spreads change in expected recovery rates. Altman and Kishore (1996) find that expected recovery rates are time-varying and a function of the overall business climate. Table III displays the monthly changes in the credit spread during the four years of the presidential cycle with and without controlling for business cycle variables.

The results show a clear presidential cycle in credit spread changes. Credit spreads widen in the first half and shrink in the second half of the cycle. Especially the second and the third year are significantly different. Comparing the second year of the cycle with the other three years of the cycle, we see an increase in credit spreads by on average 48 basis points. The third year, by contrast, displays a significant decline of spreads by on average 45 basis points. Both differences are statistically significant at the 5 percent level and robust to controlling for business cycle variables. Our main empirical findings also remain robust if we split the sample in two equally sized sub-samples. The differences between the different years in the cycle become even stronger during the second, more recent, sub-sample, indicating an increased presidential cycle effect for U.S. corporate bond markets in recent times. We thus corroborate the existence of a presidential cycle effect in both U.S. stock and bond markets. The key question that remains is whether this effect can indeed be attributed to the PCE theory. This is the question we address in the next section.

IV. Testing the PCE Theory

As mentioned in the introduction, the presidential cycle effect on U.S. stock markets and the U.S. bond market is intriguing not only because of its economic significance, but also because there is no rational explanation for its existence. A tentative explanation is provided by the presidential cycle election (PCE) theory, see Hirsch (2007). In the following subsections, the PCE theory is examined empirically by testing seven propositions. The first four propositions have a financial, fiscal or macro-economic character. Any economic manipulation by an incumbent president will be directly visible in these propositions. The final three propositions have a political nature and aim at uncovering the possible political mechanism behind the presidential cycle effect.

A. Formulation of Seven Testable Propositions

Proposition 1: If the PCE theory holds, there will be a clear presidential cycle pattern in the growth of money supply. One way for the incumbent president to manipulate the economy is by applying an expansionary economic policy during the second half of the presidential cycle, thereby kicking the money-printing machines of the Federal Reserve into overdrive.[6] After the elections, the growth of money supply would need to slow down, in order to counter the inflationary pressure caused by the expansionary policy. Thus, the growth of money supply (M1) would be higher during the second half of the presidential term compared to the first two years of the cycle. Chappell and Keech (1986) investigate the link between electoral politics and macroeconomic outcomes. They mainly focus on the relation between electoral politics and the growth of money supply (using M1) and find that electoral politics have a significant effect on the growth of money supply. However, their findings rest on limited data. Our current sample period, 1948:11-2004:10, consisting of 672 monthly observations, allows for a more robust analysis of the relation between the presidential cycle and the growth of money supply.

Proposition 2: If the PCE theory holds, there will be a presidential cycle pattern visible in the U.S. income tax levels. The PCE theory states that stimulative fiscal policies will enhance the public's sense of well-being prior to the presidential elections. A politically popular manipulation of the economy by the incumbent president is to lower the income tax levels prior to the elections.[7] According to the PCE theory, average income tax levels should be lower during the second half of the presidential cycle compared to the first.

Proposition 3: According to the PCE theory, U.S. federal spending will increase during the second half of the presidential cycle and decrease during the first half of the cycle. The economic manipulations by the incumbent president, consisting of stimulative fiscal measures and corporate friendly policies, should have a direct impact on U.S. federal spending. The PCE theory states that expansionary policies conducted prior to the elections will result in an accelerating growth of U.S. federal spending during the third and fourth year of the cycle. After the elections, the elected president will slow down the growth of U.S. federal spending to counter the fiscal hang-over.

Proposition 4: If the PCE theory holds, there will be a climbing U.S. budget deficit during the second half of the presidential cycle and a shrinking deficit during the first half of the cycle. The economic manipulations by the incumbent president during the second half of the presidential term will lead to higher federal outlays (increased spending) and lower federal income (cutting of taxes), thereby increasing the U.S. budget deficit (or decreasing a budget surplus). The growth in budget

[6] Although the Federal Reserve has considerable formal autonomy under U.S. American institutional arrangements, its insulation from political direction is largely illusory. Numerous studies have concluded that the administration's macroeconomic goals are what drive the Federal Reserve policy behaviour, as contrasted to Federal Reserve policy rhetoric (Hibbs, 1977).

[7] Another popular measure for the incumbent president would be to lower corporate taxes prior to the elections. However, this hypothesis is harder to test given limited historical data availability.

deficit will decrease (or even disappear) during the first half of the cycle, when federal outlays are reduced and federal income is increased. However, Wong and McAleer (2007) argue that an incumbent president enhances his chances of re-election by lowering the budget deficit prior to the presidential elections, instead of raising it. They state that the fourth year of the cycle will therefore display a decreasing budget deficit (or increasing surplus).

Proposition 5: According to the PCE theory, the partisanship of the presidency will have no impact on the strength of the presidential cycle effect. The PCE theory states that the impact of the presidential cycle effect on U.S. stock market returns is similar under Democratic and Republican administrations, since both have the same objective when manipulating the economy, namely enhancing their chances on re-election. These statements are based on the political business cycle theory developed by Nordhaus (1975), who argues that presidential administrations have an incentive to manipulate the economy prior to elections, regardless of the political orientation of the incumbent administration. However, Hibbs (1977) and Alesina and Sachs (1988) reject this pure political business cycle theory and find evidence for the existence of a partisan business cycle theory. Alesina and Sachs (1988) state that in American national politics, the core constituency of the Democratic Party consists of the down-scale classes, who primarily hold human capital and bear a disproportionate share of the economic and broader social costs of extra unemployment. Up-scale groups form the core constituency of the Republican Party, hold financial capital and absorb the greatest losses from extra inflation. For this reason Democratic voters generally express greater aversion to unemployment and less aversion to inflation than Republican voters. The partisanship of the administration therefore determines the policy pursued to manipulate the economy. According to Hibbs (1977) and Alesina and Sachs (1988), this results in different returns under Democratic or Republican administrations. A recent study by Santa-Clara and Valkanov (2003) confirms the existence of such a partisan business cycle theory in U.S. stock markets. However, it is unclear if this partisan business cycle has any influence on the presidential cycle effect. In other words, it is not clear whether there are any significant differences in the effect of the presidential cycle on U.S. stock market returns under Democratic or Republican administrations.

Proposition 6: If the PCE theory holds, the impact of the presidential cycle effect on U.S. stock market returns will be stronger when the president and the majority of Congress share the same party affiliation. The PCE theory states that the incumbent president will manipulate the economy prior to the presidential elections. However, Yantek (1986) argues that the degree of manipulation feasible is largely dependent on Congress, since most taxing and spending initiatives are initiated and decided there. The degree of manipulation by the incumbent president is therefore largely dependent on the partisanship of the majority of Congress. If the president and the majority of Congress share the same party affiliation, it should be easier for the president to manipulate the economy thereby increasing the strength of the presidential cycle effect on U.S. stock market returns. However, to date, no academic studies tested the Congressional influence on the presidential cycle effect. By empirically examining

this Congressional influence on the presidential cycle effect, this study enlightens the political mechanism behind the presidential cycle effect.

Proposition 7: If the PCE theory holds, the impact of the presidential cycle effect on U.S. stock market returns will be stronger when there is a re-eligible president in office. Although this proposition is not directly stated in the PCE theory, it has great value in establishing the political credibility of the PCE theory. According to the PCE theory, the strength of the presidential cycle effect is largely dependent on the degree of economic manipulation by an incumbent president. The incentive of the incumbent president, namely enhancing his chances on re-election, is fully dependent on his eligibility status. Since the U.S. constitution limits a president to a maximum of two terms in office, he will automatically loose the ability to be re-elected after serving two presidential terms. It is therefore possible that a non re-eligible president has far less incentive to manipulate the economy compared to a re-eligible president. Hence, prior to the elections there will be less economic manipulations when a non re-eligible president is in office. Simultaneously, the post-election effect (bearish stock markets in the first two year of the cycle) will also be smaller compared to elections with a re-eligible president.

B. Empirical Findings

Table IV displays the results for the first set of our seven propositions. Note that we include the controls for business cycle fluctuations in the regressions. Panel A reports the findings for the full sample period, but displays no presidential cycle effect in the growth of money supply. The growth of money supply is lower in the first year (-0.23 percent) and the fourth year (-0.62 percent) of the cycle. By contrast, the second year (0.38 percent) and third year (0.46 percent) of the cycle indicate an accelerating growth of the money supply. This pattern is inconsistent with the presence of a presidential cycle effect. Furthermore, none of these findings are statistically significant. Sub-sample regressions indicate similar results, but are omitted in the interest of brevity. The empirical findings reject our first proposition and are therefore not supportive of the PCE theory.

Panel B of Table IV reports the results for U.S. income tax levels during the four year presidential cycle. Since income tax levels are linked to the duration of a fiscal year, all regressions on income tax levels are based on annual data. Although one might expect income tax levels to be rather static, they actually changed quite often during our sample period.[8] Therefore, we focus on the lowest income tax level (*Tax low*), the highest income tax level (*Tax high*) and the change in all income tax levels (*Tax change*). The results indicate no presidential cycle effect in U.S. tax income levels. When comparing the four years of the presidential cycle, there are no statistically significant differences in either the lowest income tax level, the highest income tax level or the change in all tax levels. On average, the lowest tax bracket is 0.34 percent higher during the third year of the cycle and 0.43

[8] During the full sample period, which consists of 14 full presidential cycles, there were 10 alterations in the lowest U.S. tax income level and 18 alterations in the highest U.S. tax income level.

percent higher during the fourth year of the cycle. The highest tax bracket also indicates higher average tax levels during the third year (2.30 percent) and fourth year (1.32 percent) of the cycle. These findings do not support the existence of a presidential cycle effect. Results for the average change in all tax levels show a deviating pattern with an increase in tax levels by 0.81 percent during the first year of the cycle, and a decrease of tax levels by 0.56 percent during the fourth year of the cycle. So overall, we conclude that there is no presidential cycle effect present in U.S. income tax levels.

Panel B also displays the yearly change in U.S. federal spending during the four years of the presidential cycle. The changes in federal spending are expressed in annualized percentage points. When comparing a specific year with the other three years of the cycle, we find a slower growth of federal spending in the first three years of the cycle, but an accelerating growth of federal spending in the fourth year (3.28 percent) of the cycle. Although the signs of these findings are somewhat supportive for the presence of a presidential cycle effect, they are not statistically significant.

The negative signs of the U.S. budget surplus coefficients, presented in Panel B, indicate that the U.S. budget, on average, deteriorated during all four years of the cycle. The U.S. budget deficit is negative on average in all four years of the cycle. The first and last year, however, are somewhat less negative compared to the other years of the cycle. In the second and third year, by contrast, the budget deficit is 1.62 percentage points higher compared to the other years of the cycle. Expressing the budget deficit as a percentage of U.S. total debt results in a similar pattern. The fourth year indicates a lower budget deficit by 2.16 percent (expressed as a percentage of GDP) compared to the other three years of the cycle. This seems to support the theory of Wong and McAleer (2007), who argue that a president artificially reduces the budget deficit prior to the elections. Again, however, the results are not statistically significant

Table V displays the results for the three political propositions after controlling for business cycle variables. Panel A presents the average excess returns under Democratic and Republican administrations during the presidential cycle for the full sample period of 1948 to 2004. As expected, the excess returns of the S&P 500 display a presidential cycle effect, consisting of lower average returns in the first two years of the cycle compared to the last two years, both under Democratic and Republican presidencies. The signs of the differences indicate an overall outperformance under Democratic administrations, which confirms earlier findings by Santa-Clara and Valkanov (2003). But since none of the differences are statistically significant, no clear impact of the partisanship of the president on the strength of the presidential cycle is detected, thereby supporting the PCE theory.

Panel B of Table V reports the average excess returns under partisan domination and partisan split of control over the presidency and the majority of the Senate during the four years of the presidential cycle. The excess returns of the S&P 500 display a presidential cycle effect, consisting of lower average returns in the first two years of the cycle compared to the last two years, under both partisan domination and partisan split of control. If the PCE theory would be valid, average returns

under partisan domination would indicate a stronger presidential cycle effect, consisting of even lower average returns during the first two years and even higher average returns during the last two years of the cycle. The third and fourth year of the cycle indicate a slight outperformance of excess returns under partisan domination, while the first year reports a slight underperformance of partisan domination. Although these findings are in accordance with the PCE theory, none of the differences are statistically significant. Furthermore, the second year shows a deviating pattern with an economically significant outperformance of 13.29 percent under partisan domination, which also lacks statistical significance. Thus, there is no statistically significant evidence in average excess returns under partisan domination or partisan split during the four years of the presidential cycle. We can thus not confirm the Congressional influence on the strength of the presidential cycle effect.

Panel C of Table V presents the average excess returns when there is a re-eligible president in office and when there is none. In order to support the PCE theory, there should be a stronger presidential cycle effect on stock market returns when there is a re-eligible president in office. The findings presented in Panel C indicate lower excess returns during the first half of the cycle and higher excess returns during the second half of the cycle when there is a re-eligible president in office. Hence, these findings are supportive for the PCE theory. However, only the difference in the second year is statistically significant at the 5 percent level. Furthermore, none of the financial, fiscal or macro-economic variables indicate any statistically significant differences in economic manipulation between a re-eligible president and a non re-eligible president.[9] Overall, we find little to no statistically significant evidence to support the credibility of the PCE theory.

V. Conclusions

This paper documents the existence of the presidential cycle effect on U.S. stock markets and the U.S. bond market. Average excess returns of the S&P 500 in the second half of the presidential cycle are significantly higher compared to those in the first half. More notably, the average excess returns in the second year underperform the other years in the cycle by 9.53 percent, while the third year outperforms the other years by 13.82 percent. We show that the presidential cycle effect in stock markets is mirrored in U.S. corporate bond markets. Changes in the credit spread indicate a pattern influenced by the presidential cycle. On average, the credit spread widens by 48 basis point in the second year, while it shrinks by 45 basis points in the third year of the cycle. The results are statistically and economically significant, stable over sub-samples, and robust to controlling for business cycle effects We conclude that the presidential cycle effect in U.S. stock and bond markets is a robust phenomenon.

[9] Results available upon request.

We also tested the presidential cycle election theory (PCE theory) as a potential explanation for the presidential cycle effect using seven different propositions. After a thorough empirical analysis, there is little to no financial, fiscal or macro-economic evidence for any economic manipulation by an incumbent president. Neither the growth of money supply, U.S. income tax levels, U.S. federal spending, nor the U.S. budget indicate a statistically significant presidential cycle pattern. Furthermore, the political propositions we tested fail to uncover any significant evidence for the political background behind the presidential cycle effect. The credibility of the PCE theory as an explanation for the presidential cycle is therefore limited.

As a result, the existence of the presidential cycle effect in U.S. financial markets remains a puzzle and certainly deserves further academic attention. However, since most rational explanations as well as the PCE theory fail to solve the puzzle, alternative explanations become scarce. One possibility is that certain untested elements of the PCE theory are responsible for the presidential cycle effect. For instance, the economy could stall in the first two years of a new presidential term due to the president learning how to become efficient and productive in his new role. The president would overcome this steep learning curve halfway in his term, thereby launching economic prosperity during the second half of the cycle. Another example is based on investor sentiments documented in behavioral finance. Investors could be banking on the promises presidential candidates make, and then pull out of the market once those promises are not immediately fulfilled. However, this implies that economic agents make the same valuation errors based on sentiment cycle after cycle, which is irrational in an efficient markets sense. The maintenance of the presidential cycle would therefore require an additional assumption, such as investor myopia or cognitive biases.

References

Alesina, A., and Sachs, J., 1988, Political Parties and the Business Cycle in the United States 1948-1984, *Journal of Money, Credit and Banking*, 20, 63-82.

Altman, E.I. and Kishore, V.M., 1996, Almost Everything you wanted to know about Recoveries on Defaulted Bonds, *Financial Analysts Journal*, 52:6, 57-64.

Booth, J.R., and Booth, L.C., 2003, Is Presidential Cycle in Security Returns Merely a Reflection of Business Conditions?, *Review of Financial Economics*, 12, 131-159.

Campbell, S.D., and Li, C., 2004, Alternative Estimates of the Presidential Premium, *Finance and Economics Discussion Series*, Federal Reserve Board, Washington.

Campbell, J., 1991, A Variance Decomposition for Stock Returns, *Economic Journal*, 101, 157-179.

Chappell, H.W., and Keech, W.R., 1986, Party Differences in Macroeconomic Policies and Outcomes, *The American Economic Review*, 76, 71-74.

Chen, N., Roll, R. and Ross, S. A., 1986, Economic Forces and the Stock Market, *Journal of Business*, 59, 383-403.

Collin-Drufesne, P., Goldstein, R.S., and Martin, J.S., 2001, The Determinants of Credit Spread Changes, *Journal of Finance*, 52, 1287-1321.

Fair, R.C., 1982, The Effect of Economic Events on Votes for President: 1980 Results, *The Review of Economics an Statistics,* 64, 322-325.

Fama, E. F., 1990, Stock Returns, Expected Returns, and Real Activity, *Journal of Finance,* 45, 1089-1108.

Fama, E. F., and French, K. R., 1989, Business Conditions and Expected Returns on Stocks and Bonds, *Journal of Financial Economics,* 25, 23–49.

Foerster S.R., and Schmitz, J.J., 1997, The transmission of U.S. Election Cycles to International Stock Returns, *Journal of International Business Studies,* 1-27.

Gärtner, M., and Wellershoff, K.W., 1995, Is there an Election Cycle in American Stock Returns?, *International Review of Economics and Finance,* 4, 387-410.

Haynes, S.E., and Stone, J.A., 1988, An Integrated Test for Electoral Cycles in the U.S. Economy, The *Review of Economics and Statistics,* 71, 426-434.

Hibbs, D.A., 1977, Political Parties and Macroeconomic Policy, *American Political Science Review,* 71, 1467-1487.

Hirsch, J.A., and Hirsch, Y., 2007, *The Stock Trader's Almanac 2007*, (John Wiley & Sons, New Jersey).

Hodrick, R., 1992, Dividend Yields and Expected Stock Returns: Alternative Procedures for Inference and Measurement, *Review of Financial Studies,* 5, 357-386.

Huang, R., 1985, Common Stock Returns and Presidential Elections, *Financial Analysts Journal,* 41, 58-65.

MacRae, C.D., 1977, A Political Model of the Business Cycle, *Journal of Political Economy,* 85, 239-263.

Merton, R.C., 1974, On the Pricing of Corporate Debt: The Risk Structure of Interest Rates, *Journal of Finance,* 29, 449-470.

Newey, W.K., and West, K.D., 1987, A Simple Positive Semi-definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix, *Econometrica,* 55, 703-708.

Nordhaus, W.D., 1975, The Political Business Cycle, *Review of Economic Studies,* 42, 169-190.

Rogoff, K., 1990, Equilibrium Political Budget Cycles, *American Economic Review,* 80, 21-36.

Santa-Clara, P., and Valkanov, R., 2003, The Presidential Puzzle: Political Cycles and the Stock Market, *Journal of Finance* 58, 1841-1872.

Tufte, E. R., 1978, *Political Control of the Economy*, (Princeton University Press, Princeton, NJ).

Yantek, T., 1986, Elections and Wall Street: Taking Stock of Parties and Presidents, *The Western Political Quarterly,* 39, 390-412.

Wong, W.K., and McAleer, M., 2007, Mapping the Presidential Election Cycle in U.S. Stock Markets, *not yet published.*

Table I
Summary Statistics of Financial and Control Variables

Table I reports the averages (Mean), standard deviations (Std. Dev.), and autoregressive coefficients (A.R.) of the financial and control variables used in this study. Stock returns are recomputed in a logarithmic form, while all means are displayed in annualized percentage points. For the excess return on the S&P 500 (*SP500 – TBL*), the real return on the S&P 500 (*SP500 – INF*), the monthly change in the credit spread (*Credit spread*) and the yearly growth in money supply (*M1 growth*), the full sample period consists of 672 monthly observations (1948:11 - 2004:10). The same sample periods apply for the control variables used in this study, namely the dividend yield (DY), the quality spread (DSP), the term spread (TSP) and the relative interest rate (RR). For tax levels (*Tax low*, *Tax high* and *Tax change*), federal spending (*Fed. spending*) and budget surplus (*Budget surplus / GDP* and *Budget surplus / Total debt*) the full sample period consists of 56 yearly observations (1949-2004).

	Full Sample		
Series	Mean	Std.Dev.	A.R.
SP500 - TBL	2.81	14.48	0.02
SP500 - INF	3.87	14.58	0.04
Credit spread	0.02	0.57	0.18
M1 growth	4.59	3.89	0.99
Tax low	15.24	3.32	0.99
Tax high	62.98	22.02	0.99
Tax change	-0.98	4.82	0.24
Fed. spending	8.36	8.10	0.52
Budget surplus / GDP	-2.90	15.37	0.31
Budget surplus / Total Debt	-0.01	0.03	0.57
DY	-3.40	0.42	1.00
DSP	0.92	0.04	1.00
TSP	1.56	0.02	0.98
RR	0.00	0.01	0.90

Table II
Average Returns and Differences during the Presidential Cycle, Controlling for Business Cycle Variables

Table II presents returns and differences in returns during the presidential cycle for the entire sample period. Panel A reports the returns and differences in returns during the four year presidential cycle, not controlling for business cycle fluctuations. The "Returns" columns report the mean excess returns of the S&P 500 (*SP500 – TBL*) and the mean real returns of the S&P 500 (*SP500 – INF*), for all four years of the presidential cycle. All rates are represented in annualized percentage points. The coefficients under the "Returns" columns represent the average annualized return in a specific year of the presidential cycle. The first number under the coefficient represents the p-value under the null hypothesis that the coefficient estimates are not significantly different from zero. These p-values are obtained by using Newey-West (1987) t-statistics. The numbers in square brackets are the p-values of the test conducted using a conditional bootstrap t-statistic. The "Differences" columns report the differences between the average annualized return in one specific year of the presidential cycle and the average annualized return in the other three years of the cycle. This indicates whether or not a specific year differs significantly from the rest of the cycle. The p-values below the coefficients in the "Differences" columns are obtained from the Wald test, under the null that there is no difference in returns between a specific year in the presidential cycle and the other three years of the cycle. The numbers in square brackets are the p-values of the test conducted using a conditional bootstrap t-statistic. The row "$\bar{R}^2$ " displays the adjusted R² obtained in the regressions. Panel B displays the returns and differences in returns during the four year presidential cycle, after controlling for business cycle fluctuations. Controlling for business cycle fluctuations results in the following regression: $SP500_t - TBL_t = \beta_1 YR_{1t} + \beta_2 YR_{2t} + \beta_3 YR_{3t} + \beta_4 YR_{4t} + \gamma' X_t + \varepsilon_t$, where X_t is a vector containing the following control variables: the log dividend yield (DY), the quality spread (DSP), the term spread (TSP), and the relative interest rate (RR). To make the means directly comparable with those in Panel A, all conditioning variables in X_t are demeaned. All numbers in Panel B are obtained in a similar manner as the numbers in Panel A.

Full Sample (1948:11 - 2004:10, 672 observations)								
Panel A: Without Controlling for Business Cycle Variables								
	Returns				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
SP500 - TBL	-2.44	-4.33	13.18	4.84	-7.00	-9.53	13.82	2.71
	0.50	0.40	0.00	0.03	0.10	0.08	0.00	0.42
	[0.53]	[0.26]	[0.00]	[0.20]	[0.13]	[0.03]	[0.00]	[0.54]
SP500 - INF	-0.75	-3.48	13.97	5.76	-6.17	-9.80	13.46	2.51
	0.84	0.51	0.00	0.01	0.16	0.08	0.00	0.46
	[0.84]	[0.37]	[0.00]	[0.15]	[0.17]	[0.03]	[0.00]	[0.58]
$\bar{R}^2$		0.02						
Panel B: Controlling for Business Cycle Variables								
	Returns				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
SP500 - TBL	-1.09	-7.12	12.39	5.59	-4.65	-12.79	13.24	3.87
	0.78	0.15	0.00	0.04	0.31	0.01	0.00	0.27
	[0.78]	[0.07]	[0.00]	[0.17]	[0.28]	[0.00]	[0.00]	[0.38]
SP500 - INF	0.98	-6.04	13.29	6.74	-3.63	-13.09	12.72	3.67
	0.81	0.24	0.00	0.01	0.43	0.01	0.00	0.30
	[0.80]	[0.12]	[0.00]	[0.09]	[0.42]	[0.00]	[0.00]	[0.43
$\bar{R}^2$		0.05						

Table III
Change in Credit Spread during the Presidential Cycle

Table III presents the changes in the credit spread and the differences in these changes during the four years of the presidential cycle for the full sample period. Panel A reports the findings, not controlling for business cycle fluctuations. The "Change in Spread" columns report the monthly change in the credit spread for all four years of the presidential cycle. All changes are displayed in annualized percentage points. The coefficients under the "Change in Spread" columns represent the annualized change in the credit spread in a specific year of the presidential cycle. The first number under the coefficient represents the p-value under the null hypothesis that the coefficient estimates are not significantly different from zero. These p-value are obtained by using Newey-West (1987) t-statistics. The numbers in square brackets are the p-values of the test conducted using a conditional bootstrap t-statistic. The "Differences" columns report the differences between the annualized change in the credit spread in one specific year of the presidential cycle and the annualized change in the credit spread in the other three years of the cycle. This indicates whether or not a specific year differs significantly from the rest of the cycle. The p-values below the coefficients in the "Differences" columns are obtained from the Wald test, under the null that there is no difference in the change in the credit spread between a specific year in the presidential cycle and the other three years of the cycle. The numbers in square brackets are the p-values of the test conducted using a conditional bootstrap t-statistic. The row "$\overline{R}^2$ " displays the adjusted R^2 obtained in the regressions. Panel B reports the changes in the credit spread and the differences in these changes during the presidential cycle, after controlling for business cycle variables. The impact of business cycle fluctuations is tested by running the following regression: $Credit\_Spread_t = \beta_1 YR_{1t} + \beta_2 YR_{2t} + \beta_3 YR_{3t} + \beta_4 YR_{4t} + \gamma' X_t + \varepsilon_t$, where X_t is a vector containing the following control variables, namely the log dividend yield (DY), the quality spread (DSP), the term spread (TSP) and the relative interest rate (RR). The estimates of γ are not displayed in the interest of conciseness. All numbers in Panel B are obtained in a similar manner as the numbers in Panel A.

Full Sample (1948:11 - 2004:10, 672 observations)								
Panel A: Without Controlling for Business Cycle Variables								
	Change in Spread				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
Credit Spread	0.02	0.37	-0.32	-0.01	0.01	0.48	-0.45	-0.03
	0.83	0.04	0.04	0.97	0.96	0.02	0.01	0.86
	[0.88]	[0.01]	[0.03]	[0.97]	[0.97]	[0.01]	[0.01]	[0.86]
$\overline{R}^2$	0.02							
Panel B: Controlling for Business Cycle Variables								
	Change in Spread				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
Credit Spread	0.04	0.34	-0.30	0.15	-0.03	0.38	-0.47	0.14
	0.82	0.05	0.11	0.34	0.04	0.04	0.01	0.38
	[0.82]	[0.02]	[0.05]	[0.32]	[0.02]	[0.02]	[0.01]	[0.41]
$\overline{R}^2$	0.07							

Table IV
Financial Variables during the Presidential Cycle

Table IV displays the financial variables of the tested propositions during the four years of the presidential cycle, after controlling for business cycle variables. The impact of business cycle fluctuations is tested by running the following regression: $Variable_t = \beta_1 YR_{1t} + \beta_2 YR_{2t} + \beta_3 YR_{3t} + \beta_4 YR_{4t} + \gamma' X_t + \varepsilon_t$, where X_t is a vector containing the control variables, namely the log dividend yield (DY), the quality spread (DSP), the term spread (TSP), and the relative interest rate (RR). The estimates of γ are not displayed in the interest of conciseness. Panel A presents the results for variables measured in monthly observations, while Panel B reports the results for variables measured in yearly observations. The "Changes" columns report monthly or yearly observations of the financial variables for all four years of the presidential cycle. 'M1 Growth' represents the annualized growth in money supply. 'Tax low' is the average income tax level for the lowest tax bracket, 'Tax high' displays the highest bracket, while 'Tax change' represents the combined change in these brackets. 'Federal spending' reports the yearly change in federal spending. 'Budget surplus / GDP' represents the change in the budget surplus or deficit as a percentage of GDP, while 'Budget surplus / Total debt' reports the change in the budget surplus or deficit as a percentage of total debt. The coefficients under the first four columns represent the annualized change of a financial variable in a specific year of the presidential cycle. The *p*-values are obtained by using Newey-West (1987) *t*-statistics. The numbers in square brackets are the *p*-values of the test conducted using a conditional bootstrap *t*-statistic. The last four columns report the differences between the annualized change of a financial variable in one specific year of the presidential cycle and the annualized change in a financial variable in the other three years of the cycle. The *p*-values below the coefficients are obtained from the Wald test, under the null that there is no difference in the change of a financial variable between a specific year in the presidential cycle and the other three years of the cycle. All numbers in Panel B are obtained in a similar manner as the numbers in Panel A.

Panel A: Full Sample based on Monthly Observations (1948:11 - 2004:10, 672 observations)								
	Changes				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
M1 Growth	5.49	5.95	6.00	5.20	-0.23	0.38	0.46	-0.62
	0.00	0.00	0.00	0.00	0.75	0.52	0.46	0.33
	[0.00]	[0.00]	[0.00]	[0.00]	[0.45]	[0.29]	[0.30]	[0.23]
Panel B: Full Sample based on Yearly Observations (1949 - 2004, 56 observations)								
	Changes				Differences			
	Year 1	Year 2	Year 3	Year 4	Yr.1 - 2,3,4	Yr.2 - 1,3,4	Yr.3 - 1,2,4	Yr.4 - 1,2,3
Tax low	14.15	14.34	14.80	14.87	-0.52	-0.27	0.34	0.43
	0.00	0.00	0.00	0.00	0.27	0.61	0.53	0.37
	[0.00]	[0.00]	[0.00]	[0.00]	[0.36]	[0.77]	[0.59]	[0.44]
Tax high	60.58	60.39	63.60	62.88	-1.69	-1.95	2.30	1.32
	0.00	0.00	0.00	0.00	0.47	0.51	0.40	0.59
	[0.00]	[0.00]	[0.00]	[0.00]	[0.57]	[0.65]	[0.57]	[0.72]
Tax change	-1.00	-2.48	-0.93	-2.02	0.81	-1.17	0.92	-0.56
	0.34	0.13	0.43	0.14	0.48	0.46	0.46	0.71
	[0.49]	[0.08]	[0.45]	[0.10]	[0.54]	[0.53]	[0.61]	[0.74]
Fed. spending	9.65	7.83	9.17	12.17	-0.04	-2.48	-0.74	3.28
	0.00	0.00	0.00	0.00	0.98	0.24	0.70	0.32
	[0.00]	[0.00]	[0.00]	[0.00]	[0.91]	[0.29]	[0.80]	[0.24]
Budget surplus / GDP	-5.07	-7.12	-7.12	-4.29	1.13	-1.62	-1.62	2.16
	0.29	0.02	0.12	0.32	0.82	0.77	0.77	0.66
	[0.26]	[0.08]	[0.06]	[0.28]	[0.84]	[0.77]	[0.76]	[0.70]
Budget surplus / Total debt	-0.01	-0.02	-0.02	-0.01	0.01	0.00	-0.01	0.00
	0.37	0.00	0.03	0.14	0.31	0.63	0.36	0.79
	[0.39]	[0.03]	[0.00]	[0.07]	[0.34]	[0.80]	[0.39]	[0.81]
$\overline{R}^2$	0.30							

Table V
Average Returns under Political Propositions during the Presidential Cycle

Table V presents returns and differences in returns during the presidential cycle under the political propositions after controlling for business cycle variables. The impact of business cycle fluctuations is tested by running the following regression: $Variable_t = \beta_1 YR_{1t} + \beta_2 YR_{2t} + \beta_3 YR_{3t} + \beta_4 YR_{4t} + \gamma' X_t + \varepsilon_t$, where X_t is a vector containing the control variables, namely the log dividend yield (DY), the quality spread (DSP), the term spread (TSP), and the relative interest rate (RR). The estimates of γ are not displayed in the interest of conciseness. Panel A reports the returns under Democratic and Republican presidents. The first rows report the average excess returns (*SP500 – TBL*) of the S&P 500 under both Democratic presidents (DP) and Republican presidents (RP), during all four years of the presidential cycle. All rates are represented in annualized percentage points. The *p*-values are obtained by using Newey-West (1987) *t*-statistics. The numbers in square brackets are the *p*-values of the test conducted using a conditional bootstrap *t*-statistic. The row "T / Democrats" displays the number of observations and the number of months of Democratic administrations during the estimation period. Panel B reports the returns and differences in returns during the presidential cycle under partisan domination (PD) and partisan split (PS) of control over the presidency and the Senate. Panel C displays the returns and differences in returns during the presidential cycle when a re-eligible president is in office (RE) and when there is no re-eligible president in office (NRE). All numbers in Panel B and Panel C are obtained in a similar manner as the numbers in Panel A.

Panel A: Full Sample (1948:11 - 2004:10, 672 observations)												
	Returns under Democratic and Republican presidents								Differences between DP and RP			
	Year 1 x DP	Year 1 x RP	Year 2 x DP	Year 2 x RP	Year 3 x DP	Year 3 x RP	Year 4 x DP	Year 4 x RP	Year 1	Year 2	Year 3	Year 4
SP500 - TBL	6.78	-4.19	1.80	-12.15	18.08	9.46	11.38	3.34	10.97	13.95	8.62	8.05
	0.23	0.44	0.77	0.11	0.00	0.08	0.00	0.40	0.18	0.28	0.29	0.24
	[0.20]	[0.51]	[0.72]	[0.05]	[0.00]	[0.14]	[0.03]	[0.59]	[0.24]	[0.19]	[0.35]	[0.32]
T / Democrats	672 / 288											
	Panel B: Returns under Partisan Domination and Partisan Split								Differences between PD and PS			
	Year 1 x PD	Year 1 x PS	Year 2 x PD	Year 2 x PS	Year 3 x PD	Year 3 x PS	Year 4 x PD	Year 4 x PS	Year 1	Year 2	Year 3	Year 4
SP500 - TBL	1.78	7.49	1.35	-11.94	15.37	12.73	10.50	4.88	-5.71	13.29	2.63	5.62
	0.74	0.25	0.83	0.19	0.00	0.02	0.00	0.20	0.43	0.23	0.74	0.21
	[0.74]	[0.24]	[0.79]	[0.06]	[0.03]	[0.07]	[0.03]	[0.37]	[0.50]	[0.14]	[0.78]	[0.36]
T / Partisan Dom.	672 / 264											
	Panel C: Returns under Re-eligible President in Office and No Re-eligible President in Office								Differences between RE and NRE			
	Year 1 x RE	Year 1 x NRE	Year 2 x RE	Year 2 x NRE	Year 3 x RE	Year 3 x NRE	Year 4 x RE	Year 4 x NRE	Year 1	Year 2	Year 3	Year 4
SP500 - TBL	-1.42	0.62	-14.58	7.73	13.63	10.94	7.23	3.12	-2.04	-22.31	2.70	4.12
	0.78	0.92	0.01	0.24	0.00	0.11	0.02	0.48	0.81	0.01	0.70	0.38
	[0.83]	[0.90]	[0.03]	[0.10]	[0.04]	[0.02]	[0.18]	[0.52]	[0.82]	[0.00]	[0.72]	[0.48]
T / First Term	672 / 432											
R^2	0.06											